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POLAR[®]

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Polar Coach[™]

HEART RATE MONITOR • USER'S MANUAL



USA

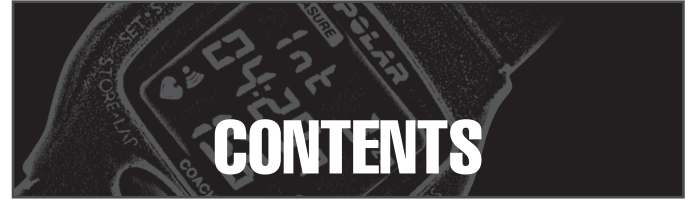
QUICK REFERENCE GUIDE

IN THE HEART RATE MEASUREMENT MODE (INT OFF)

| FUNCTION | BUTTON |
|---|---|
| Illuminate the display | SIGNAL/LIGHT |
| Turn the Target Zone sound signal on/off | SIGNAL/LIGHT (press and hold) |
| Start/stop the stopwatch | SET/START/STOP |
| Check the secondary measurement display | Bring the receiver close to the Polar logo of the transmitter |
| Swap the heart rate limits | SELECT (when the stopwatch is running) |
| Store split and lap times | STORE/LAP/RECOVERY |
| Start recovery calculation | SET/START/STOP (to stop the stopwatch) -> STORE/LAP/RECOVERY |
| Start the timers | automatic |
| Reset the stopwatch | SET/START/STOP (to stop the stopwatch) -> SET/START/STOP (press and hold) |
| Stop the heart rate measurement and return to the Time of day display | SET/START/STOP (to stop the stopwatch) -> SELECT -> SELECT -> SELECT |

IN THE INTERVAL TRAINING MODE (INT ON)

| FUNCTION | BUTTON |
|---|--------------------------------------|
| Enter interval training mode (stopwatch is running) | SELECT |
| Swap the heart rate limits | automatic |
| Start recovery calculation | automatic |
| Pause an interval | SET/START/STOP |
| Interrupt an interval | STORE/LAP/RECOVERY |
| Stop interval training | automatic (If Int Cont -> SELECT) |



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POLAR COACH HEART RATE MONITOR

Congratulations on the purchase of your Polar Coach Heart Rate Monitor. We are proud to offer you the most advanced features and to assist you in achieving your personal fitness and performance goals.

Thank you for choosing Polar.

POLAR®

VISUAL CUES FOR READING THIS GUIDE



Indicates an important issue. Please pay attention!



Indicates a tip on how to do things faster or a shortcut.



Indicates a useful tip. It's good to know these things.



See also / Continue from.



Indicates interval training.

IMPORTANT TO REMEMBER!

- Adjust the strap length so that it fits snugly and wet the Polar Coded Transmitter electrodes to ensure flawless measurement of your heart rate.
- Do not stretch or bend the transmitter.
- Do not operate the buttons of the wrist receiver under water.
- Wash and dry the transmitter regularly after use; never store it wet.
- Keep the Polar Heart Rate Monitor out of extreme cold or heat.

FEATURES

Your Polar Coach offers you the following features:

Watch functions:

- Time
- Alarm
- Date
- 12 hour or 24 hour time mode

Basic functions:

- wireless, continuous, and ECG accurate heart rate measurements
- coded transmission of your heart rate to avoid interference caused by other users of heart rate monitors
- stopwatch with split and lap-time indicators
- three adjustable target zone limits with blinking and sound alarms
- 43 split and lap times with average heart rates of each lap
- two adjustable, alternating timers
- time or heart rate based recovery calculation
- display alternatives during the Heart Rate Measurement mode: time of day, total exercising time or lap time
- Polar Heart Touch for activating the backlight and checking the secondary measurement display during an exercise session
- backlight
- water resistant to 20 meters

Freely programmable interval training functions:

- ability to set 99 intervals (28 are recorded, the use of lap functions during warm-up reduces the amount)
- countdown timer
- three target zones
- recovery calculation

Recording functions:

- maximum and average heart rate for the complete exercise session
- date and starting time of the exercise session
- number of laps and the total time of the exercise session
- time spent above, within and below each target zone
- last recovery value (time or heart rate based)
- lap and split times with average and ending heart rates
- ability to recall the recorded information on the Polar Coach wrist receiver display

Data download:

- automatic and dynamic recording of average heart rate on sampling rate (60 samples): 30 s, 1 min, 2 min, 4 min and 8 min, max. 8 hours (PC Coach Light™ software required)
- ability to download recorded training information onto a computer for detailed analysis by SonicLink (PC Coach Light™ software required)
- also interfaceable to Polar Training Advisor software Version 1.1 onwards and Polar Precision Performance software Version 2.1 onwards via Polar Interface unit

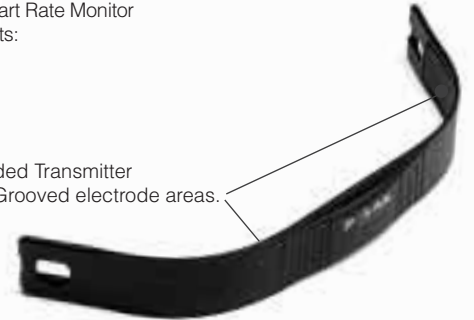
Other:

- shortcuts for advanced users

PARTS

The Polar Coach Heart Rate Monitor consists of three parts:

1. Polar Coded Transmitter
Grooved electrode areas.



2. Elastic strap



3. Polar Coach wrist receiver



GETTING STARTED

1. Attach the Polar Coded Transmitter to the elastic strap.



2. Adjust the strap length so that it fits snugly and comfortably. Secure the strap around your chest, below the chest muscles. Lock the buckle.



3. Pull the transmitter off your chest and **wet the grooved electrode areas** on the back of it.



4. Check that the wet electrode areas are firmly against your skin and that the Polar logo is in a central upright position.



5. Wear the wrist receiver as you would wear an ordinary watch.

Alternatively, if you go biking, you may attach the wrist receiver to a Polar Bike Mount ► **Books and Accessories**. Keep the wrist receiver within the transmission range (3 feet / 1 meter).

! *It is recommended that you wear the transmitter against your bare skin to ensure flawless operation. However, if you wish to wear the transmitter over a shirt, moisten the shirt well under the electrodes.*

It is important that the electrodes are wet during the exercise session. However, after exercising, take good care of the transmitter to save the electrodes and battery life:

1. Wash the transmitter carefully with a mild soap water solution.
2. Rinse it with pure water.
3. Dry the transmitter carefully.

To start the heart rate measurement right away with default settings*

► **Start the heart rate measurement.**

* for default settings see **Technical specifications**.



Start here to set:

- Alarm
- Time of day
- Date
- Button sound
- 12h or 24h time display

ALARM
TIME
DATE
Sound
TIME

In the display each function is represented by a word and flashing block in the order given above.

Setting the 12h or 24h time display:

1. In the Time of day display press and hold SET/START/STOP. Release.
*TIME and 12h/24h are displayed for a couple of seconds.
The displayed alternative (12h or 24h) will be saved.
Display returns automatically to show the time of day.*
2. The chosen time mode will now be used in all watch and alarm functions.

► Turning to a 12h or 24h time display.

Starting to set the settings:

1. In the Time of day display press SET/START/STOP.
*SET is flashing in the upper right corner of the display.
The uppermost block of the graphic bar on the right is flashing.
ALARM is displayed.
ON or OFF is flashing.*
2. Go through the setting of the alarm, time of day, date, button sound and 12h/24h displays by following the instructions given below step by step. If you chose the 24 h mode you can skip those parts in the following instructions, which advise you to set AM or PM.



You can also go directly to setting just one particular function by pressing SET/START/STOP briefly as many times as needed until you see the corresponding text symbol in the display. Then follow the instructions for setting that particular function.



How to keep the backlight on while setting the watch?

1. In the Time of day display press SIGNAL/LIGHT.
Display is illuminated for a few seconds.
2. While the display is illuminated press SET/START/STOP to set the alarm.
*ALARM is displayed.
ON or OFF is flashing.*

The backlight will now be activated with each press of a button while in the watch setting mode.

SETTING THE ALARM

If you are in the Time of day display, press SET/START/STOP.
*ALARM is displayed.
ON or OFF is flashing.*

1. Press SIGNAL/LIGHT to turn the alarm ON or OFF.
2. Press STORE/LAP/RECOVERY to confirm your selection.
AM or PM is flashing.
3. Press SIGNAL/LIGHT to select AM or PM.
4. Press STORE/LAP/RECOVERY to confirm your selection.
The hours are flashing.
5. Press SIGNAL/LIGHT to select the desired hour.



The digits scroll more quickly if you press and hold SIGNAL/LIGHT. Release the button when approaching the desired value.

6. Press STORE/LAP/RECOVERY to confirm your selection.
The minutes are flashing.
7. Press SIGNAL/LIGHT to select the desired minute.
8. Press STORE/LAP/RECOVERY to confirm your selection.
*SET is flashing.
OFF or ON is flashing.*



When the alarm is turned ON you will see  in the Time of day display.

When the alarm comes on it will sound for one minute or you can turn it off by pressing STORE/LAP/RECOVERY.

Choose from the following two alternatives to continue:

1. To set the time of day, press SET/START/STOP.
*TIME is displayed.
AM (alternatively the hours) is flashing.*

▶ Continue from **Setting the time of day.**

2. To return to the Time of day display, press SELECT.



How to turn the alarm ON or OFF in the Time of day display:

1. Press and hold SIGNAL/LIGHT. Release.
*ALARM, alarm time and ON or OFF are displayed for a couple of seconds.
The displayed alternative (ON or OFF) will be saved and the display automatically returns to show the time of day.*

SETTING THE TIME

If you are in the Time of day display, press SET/START/STOP twice.
*TIME is displayed.
AM (alternatively the hours) is flashing.*

1. Press SIGNAL/LIGHT to select AM or PM.
2. Press STORE/LAP/RECOVERY to confirm your selection.
The hours are flashing.
3. Press SIGNAL/LIGHT to select the desired hour.
4. Press STORE/LAP/RECOVERY to confirm your selection.
*The minutes are flashing.
The seconds go to zero.*
5. Press SIGNAL/LIGHT to select the desired minute.
6. Press STORE/LAP/RECOVERY to confirm your selection.
*The seconds start running.
AM or PM or the hours are flashing.*



Choose from the following two alternatives to continue:

1. To set the date, press SET/START/STOP.
*DATE is displayed.
The day/month is flashing.*

▶ Continue from **Setting the date.**

2. To return to the Time of day display, press SELECT twice.

SETTING THE DATE

If you are in the Time of day display, press SET/START/STOP three times.
*DATE is displayed.
The day/month is flashing.*



The date is displayed differently depending on which time mode (12h or 24 h) has been chosen.

12 h time mode:
MONTH - DAY - YEAR

24 h time mode:
DAY - MONTH - YEAR



The first digits are flashing.

1. Press SIGNAL/LIGHT to select:
The month if you have chosen the **12h** time mode.
The day if you have chosen the **24h** time mode.
2. Press STORE/ LAP/RECOVERY to confirm your selection.
The middle digits are flashing.
3. Press SIGNAL/LIGHT to select.
The day if you have chosen the **12h** time mode.
The month if you have chosen the **24h** time mode.
4. Press STORE/LAP/RECOVERY to confirm your selection.
The year is flashing.
5. Press SIGNAL/LIGHT to select the desired year.
6. Press STORE/LAP/RECOVERY to confirm your selection.

Choose from the following two alternatives to continue:

1. To set the button sound, press SET/START/STOP.
*Sound is displayed.
ON or OFF is flashing.*

▶ Continue from **Turning the button sound ON or OFF.**

2. To return to the Time of day display, press SELECT twice.

TURNING THE BUTTON SOUND ON OR OFF

If you are in the Time of day display, press SET/START/STOP four times.
*Sound is displayed.
ON or OFF is flashing.*

If you turn the button sound ON you will hear a beep when you press a button.

1. Press SIGNAL/LIGHT to turn the button sound ON or OFF.



Choose from the following two alternatives to continue:

1. To switch to a 12h or 24h time display, press SET/START/STOP.
*TIME is displayed.
12h or 24h is flashing.*

▶ Continue from **Switching to a 12h or 24h time display.**

2. To return to the Time of day display, press SELECT twice.

How to set the button sound ON or OFF in the Time of day display:

1. Press and hold SELECT. Release.
*Sound and ON/OFF are displayed for a couple of seconds.
The displayed alternative (ON or OFF) will be saved and the display automatically returns to show the time of day.*

SWITCHING TO A 12H OR 24H TIME DISPLAY

If you are in the Time of day display, press SET/START/STOP five times.
TIME is displayed.
12h or 24h is flashing.

If you choose a 12h time display you will see the time with an AM or PM indicator as follows:

AM Before 12:00 o'clock noon
 PM After 12:00 o'clock noon

1. Press SIGNAL/LIGHT to select 12h or 24h.

Choose from the following two alternatives to continue:

1. To set the alarm, press SET/START/STOP.
ALARM is displayed.
ON or OFF is flashing.

▶ Continue from **Setting the alarm.**

2. To return to the Time of day display, press SELECT twice.

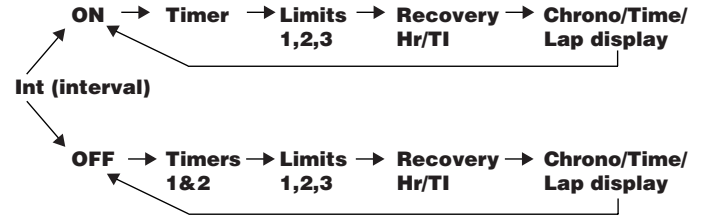


⚡ Switching to a 12h or 24h time display in the Time of day display:

1. Press and hold SET/START/STOP. Release.
TIME and 12h/24h are displayed for a couple of seconds.
The displayed alternative (12h or 24h) will be saved and the display automatically returns to show the time of day.

The chosen time mode will now be used by all watch functions.

SETTING THE HEART RATE MEASUREMENT FEATURES



When you start setting your heart rate measurement preferences, your first choice is if you want to do normal or interval training. These two training modes are both available options. You can set your personal preferences for all available functions and select them at the beginning of an exercise session, according to your needs. The preferences for your last training session will be saved as the default for your next training session.

You can set the following functions:

- Two timers for normal training / one timer for interval training
- Heart rate limits 1, 2, 3
- Recovery heart rate / recovery time
- Primary measurement display

TIM1, TIM2 / TIM
LIM1, LIM2, LIM3
RECO Hr/TI
Chrono/TIME/LAP

In the display each function is represented by an abbreviated text and flashing block in the above order.

⚡ You can go directly to setting a particular function by doing the following:


1. In the Time of day display press SELECT three times.
SET is flashing in the upper right corner of the display.
2. Press SET/START/STOP briefly as many times as needed until you see the corresponding text symbol in the display.
3. Follow the instructions for setting that particular function.



While setting the preferences the digits scroll more quickly if you press and hold SIGNAL/LIGHT. Release the button when approaching the desired value.

SETTING THE INTERVAL FUNCTION

If you are in the Time of day display press SELECT three times.
SET and the uppermost block of the graphic bar on the right are flashing.
Int and the number of intervals are displayed.
ON or OFF is flashing.

1. Press SIGNAL/LIGHT to turn the Interval function ON or OFF.
 If you turn Int ON you will see the interval indicator  in the display. This setting will allow an interval training session the next time you start measuring heart rate.

► Start the heart rate measurement.

2. Press STORE/LAP/RECOVERY to confirm your selection.
The number, representing the number of intervals, is flashing.
3. Press SIGNAL/LIGHT to select the number of intervals.

You can set 99 intervals. After 99 Cont appears in the display. Cont (continuous) means that the intervals will succeed one another until you stop the interval training session (max. 99h 59min 59s).

4. Press STORE/LAP/RECOVERY to confirm your selection.
ON or OFF is flashing.

Choose from the following two alternatives to continue:

1. To set the Timers, press SET/START/STOP.
The second block of the graphic bar is flashing.
TIM 1 or TIM is displayed.
ON or OFF is flashing.

► Continue from **Setting the Timers.**

2. To return to the Time of day display press SELECT twice.



SETTING THE TIMERS

If you are in the Time of day display press SELECT three times.
Int is displayed.

Press SET/START/STOP once to enter the mode for setting the timer.
TIM1 or TIM is displayed.
ON or OFF is flashing.

Timers

For interval training mode select the length of an interval by setting the time for a countdown timer. You can set one timer.

During the heart rate measurement mode this function helps you to divide your exercise session into separate phases (e.g. warm up, exercise phase, cool down). You can set two timers.

You can set the time period in minutes and seconds (max. 99 min 59 sec).

Adjust the settings to your preferences:

A. Interval training mode (Int is ON):

One timer in use.

1. Press SIGNAL/LIGHT to turn the timer function ON or OFF.
2. Press STORE/LAP/RECOVERY to confirm your selection.
The minutes of the Timer are flashing.
3. Press SIGNAL/LIGHT to select the desired number of minutes.
4. Press STORE/LAP/RECOVERY to confirm your selection.
The seconds of the Timer are flashing.
5. Press SIGNAL/LIGHT to select the desired number of seconds.
6. Press STORE/LAP/RECOVERY to confirm your selection.
ON or OFF is flashing.




B. Heart rate measurement mode (Int is OFF):


Two timers in use.

1. Press SIGNAL/LIGHT to turn the timer function ON or OFF.
2. Press STORE/LAP/RECOVERY to confirm your selection.
The minutes of Timer 1 are flashing.
3. Press SIGNAL/LIGHT to select the desired number of minutes.
4. Press STORE/LAP/RECOVERY to confirm your selection.
The seconds of the Timer are flashing.
5. Press SIGNAL/LIGHT to select the desired number of seconds.
6. Press STORE/LAP/RECOVERY to confirm your selection.
7. Press SET/START/STOP to set Timer 2.
ON or OFF is flashing.
8. Repeat the steps 1 to 6 to set Timer 2.



 *Timer 1 starts running when you start the stopwatch. You will hear one beep when the time of timer 1 is up. Timer 2 will start automatically after the beep. You will hear two beeps when the time of timer 2 is up. If you only set timer 1, it will not repeat itself. When the time is up, you will hear 6 beeps.*

Timer 2 cannot be set if TIM 1 is switched OFF.

 *If you accidentally pass the digit you wanted to enter, press and hold SET/START/STOP to restart from 00.*

Choose from the following two alternatives to continue:

1. To set Heart rate limits 1, 2 and 3 press SET/START/STOP.
*The third block of the graphic bar is flashing.
LIM1 is displayed.
The reading representing the upper limit 1 is flashing.*
- ▶ Continue from **Setting the heart rate limits.**
2. To return to the Time of day display press SELECT twice.

SETTING THE HEART RATE LIMITS

If you are in the Time of day display press SELECT three times.

Int is displayed.

Press SET/START/STOP until you enter the mode for setting the heart rate limit.


LIM1 is displayed.

The upper number, representing the upper limit of LIM 1, is flashing.




Heart rate limits

Heart rate limits can be set in beats per minute increments which allows you to monitor your workouts insuring the correct exercise session intensity. You can set three different target heart rate limits (LIM1, LIM2, and LIM3).

 *In the interval training mode the heart rate limits swap automatically according to different exercise phases ▶ **Functions during the interval training mode.***

Setting heart rate limits 1:

1. Press SIGNAL/LIGHT to select the upper limit to heart rate limits 1.

 *You cannot set the upper limit below the lower limit. The range for the target heart rate zone is 10 - 240.*

2. Press STORE/LAP/RECOVERY to confirm your selection.
The lower reading, representing the lower limit to heart rate limits 1, is flashing.
3. Press SIGNAL/LIGHT to select the desired lower limit to heart rate limits 1.
4. Press STORE/LAP/RECOVERY to confirm your selection.
The upper reading is flashing.
5. Press SET/START/STOP to set the limits to heart rate limits 2.
LIM2 is displayed.

Setting heart rate limits 2:

If OFF is flashing in the lower row of the display, press SIGNAL/LIGHT to switch heart rate limits 2 ON.

LIM2 is displayed in the upper row of the display.

The upper reading, representing the upper limit to heart rate limits 2, is flashing.

1. Press SIGNAL/LIGHT to select the desired upper limit.
2. Press STORE/LAP/RECOVERY to confirm your selection.
The lower reading representing the lower limit to heart rate limits 2, is flashing.
3. Press SIGNAL/LIGHT to select the desired lower limit.
4. Press STORE/LAP/RECOVERY to confirm your selection.
The upper reading is flashing.
5. Press SET/START/STOP to set the limits to heart rate limits 3.

Setting heart rate limits 3:

LIM3 is displayed in the upper row of the display.

Repeat the same instructions as for setting heart rate limits 2.

Turning the limits 2 or 3 OFF:

1. Enter the mode for setting the heart rate limits.
*LIM2 or LIM3 is displayed in the upper row of the display.
The upper reading, representing the upper limit, is flashing.*
2. Press and hold SET/START/STOP until OFF appears in the display.



If you turn heart rate limits 2 OFF, heart rate limits 3 automatically switches OFF.

Choose from the following two alternatives to continue:

1. To set the Recovery function press SET/START/STOP.
*RECO is displayed.
The fourth block of the graphic bar is flashing.
Hr or TI is flashing.*
- ▶ Continue from **Setting the recovery function.**
2. To return to the Time of day display press SELECT twice.

SETTING THE RECOVERY FUNCTION

If you are in the Time of day display press SELECT three times.
Int is displayed.

Press SET/START/STOP until you enter the recovery setting mode.
*RECO is displayed.
Hr or TI is flashing.*



Recovery Heart Rate (RECO Hr)

Measures how much the heart rate decreases during the pre-set time period.
You set the time period in minutes and seconds.



Recovery Time (RECO TI)

Measures the time until a certain heart rate is reached.
You set the heart rate to the reading you want to reach.

1. Press SIGNAL/LIGHT to select RECO HR or RECO TI.


According to your selection choose from these alternatives:


A. RECO HR:

2. Press STORE/LAP/RECOVERY to confirm your selection.
*RECOHr is displayed in the upper row.
ON or OFF is flashing in the lower row.*
3. Press SIGNAL/LIGHT to turn the recovery function ON or OFF.
4. Press STORE/LAP/RECOVERY to confirm your selection.
Minutes are flashing.
5. Press SIGNAL/LIGHT to select the desired number of minutes.
6. Press STORE/LAP/RECOVERY to confirm your selection.
Seconds are flashing.
7. Press SIGNAL/LIGHT to select the desired number of seconds.
8. Press STORE/LAP/RECOVERY to confirm your selection.

B. RECO TI:

2. Press STORE/LAP/RECOVERY to confirm your selection.
*RECOTI is displayed in the upper row.
ON or OFF is flashing in the lower row.*
3. Press SIGNAL/LIGHT to turn the recovery function ON or OFF.
4. Press STORE/LAP/RECOVERY to confirm your selection.
Digits for the heart rate value start to flash in the middle row.
5. Press SIGNAL/LIGHT to select the heart rate value you want to reach during the recovery time.
6. Press STORE/LAP/RECOVERY to confirm your selection.

 *If you accidentally pass the digit you wanted to select, press and hold SET/START/STOP to restart from 00.*

 *In the heart rate measurement mode the recovery calculation can be carried out only once at the end of the exercise by pressing STORE/LAP/RECOVERY.*

In the interval training mode the recovery calculation will be carried out automatically at the end of each interval.

Choose from the following two alternatives to continue:

1. To set the primary measurement display press SET/START/STOP.
*The bottom block of the graphic bar is flashing.
Chrono (alternatively TIME or LAP) is flashing.*
- ▶ Continue from **Setting the primary measurement display.**
2. To return to the Time of day display press SELECT twice.

SETTING THE PRIMARY MEASUREMENT DISPLAY

If you are in the Time of day display press SELECT three times.
Int is displayed.

Press SET/START/STOP until you enter the mode for setting the primary measurement display.

*Chrono (alternatively TIME or LAP) is flashing.
00:00 0 (alternatively time of day) is displayed.*



1. Press SIGNAL/LIGHT to select the desired primary measurement display. **The alternative you choose will be displayed in the middle row during the heart rate measurement.**

CHOOSE FROM THESE ALTERNATIVES:

CHRONO 00:00 0 displays the total exercise time.

You will see lap time in the upper row of the display during the measurement.

TIME displays the time of day (for example 1:52 PM/13:52).

You will see lap time in the upper row of the display during the measurement.

LAP 00:00 0 displays lap times. Lap times can be taken by pressing STORE/LAP/RECOVERY.

You will see the number of the lap in the upper row of the display during the measurement.

According to the alternative you choose for the primary measurement display you will see the secondary measurement display during the heart rate measurement by using the Polar Heart Touch (▶ Polar Glossary).

For more details see Functions during the heart rate measurement/Checking the secondary measurement displays.

Choose from the following two alternatives to continue:

1. To turn the interval function ON or OFF press SET/START/STOP.
The uppermost block of the graphic bar is flashing.
- ▶ Continue from **Setting the Interval function.**
2. To return to the Time of day display, press SELECT twice.

START THE HEART RATE MEASUREMENT

1. Wear the transmitter and receiver as described in Getting started.
2. Make sure that the Polar Coach successfully establishes a heart rate code to avoid interference during measurement:
 - Keep the receiver within 3 feet/1 meter of the Polar Coded Transmitter you are wearing.
 - Check that you are not near other people with heart rate monitors and that there are not high voltage power lines, televisions, mobile phones, cars, motor driven exercise equipment, electric railways, bus lines etc. near you during the code search.
3. Begin with the display showing Time of day.
4. Press SELECT to enter the MEASURE mode.

According to your settings the display will look as follows:


Int OFF



Heart rate measurement mode

Int ON



Interval training mode
( symbol in the display)

*The wrist receiver searches for the coded transmission for a maximum of 20 seconds.
Heart rate measurement commences and the heart symbol inside the frame starts flashing. Your heart rate reading (in beats per minute) appears in the display.*

If the code search was not successful, the frame around the heart symbol will disappear after 20 seconds. Go back to step 2 to repeat the code search.

If you still do not succeed in code searching, but your heart rate is displayed and the heart symbol without a frame is flashing, you can start exercising but your wrist receiver may pick up interference from other heart rate monitors.

5. Start the stopwatch by pressing SET/START/STOP.
*Stopwatch starts running and you hear a long beep.
Automatic heart rate recording begins.
Display is illuminated for a few seconds.*
6. You can now start exercising with your heart rate monitor.

If you started to exercise in the heart rate measurement mode

► **Functions during the heart rate measurement mode.**

If you started to exercise in the interval training mode

► **Functions during the interval training mode.**



Quick start for heart rate measurement mode from the Time of day display: wear the transmitter and receiver as described in Getting started, press and hold STORE/LAP/RECOVERY. Release.

FUNCTIONS DURING THE HEART RATE MEASUREMENT MODE


SEEING YOUR HEART RATE

You can see your heart rate in the bottom line of the display. The target zone information is displayed as follows:

- rz ■ You are exercising within the preset Target Zone.
- rz ■ You are exercising above the preset Target Zone.
- rz ■ You are exercising below the preset Target Zone.

Exercising within, above, and below the Target Zone is indicated only when the stopwatch is running.

TURNING THE TARGET ZONE SOUND SIGNAL ON OR OFF

Press and hold SIGNAL/LIGHT until the target zone sound signal  appears or disappears.



Polar Coach saves the target zone sound signal setting i.e. the next time you start heart rate measurement the previous setting will be used.

PAUSING THE STOPWATCH

Press SET/START/STOP to stop or start the stopwatch.

Average heart rate, maximum heart rate, and time below, within, and above the Target Zone are saved only when the stopwatch is running.

ILLUMINATING THE DISPLAY

Press SIGNAL/LIGHT.

STARTING THE TIMERS

If the timers are turned on they automatically start running once you start the stopwatch. Timers alternate in the following order: Timer 1, Timer 2, Timer 1, Timer 2, etc. Timers stop running when you stop the stopwatch.

If you have set only Timer 1, it will not repeat itself after its time is up. You will hear six beeps when the time on Timer 1 has run out. One timer is helpful in knowing exactly when a preset exercise time has come to an end and it is time to stretch and cool down.

To set the timers ► **Setting the Timers.**

SWAPPING THE HEART RATE LIMITS

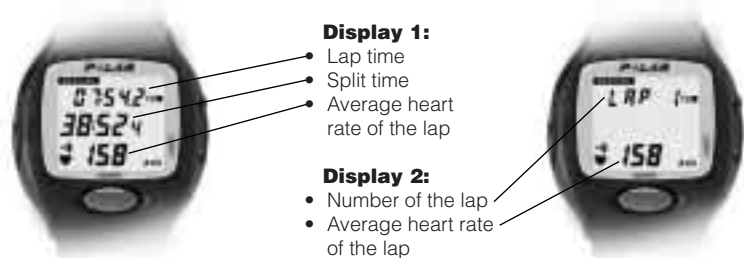
When the stopwatch is running, press and release SELECT to activate the alternative heart rate limits. You will see the new limits on the display for a few seconds.

You can swap limits only if you have set at least two limits.

► **Setting the Limits 1, 2 & 3.**

STORING LAP TIME AND SPLIT TIME

Press STORE/LAP/RECOVERY to record the lap and split times. The following information will be displayed for a few seconds:



The lap timer starts over from zero.



Polar Coach allows you to record 43 lap times. After taking 43 lap times FULL appears in the display. You can continue taking lap times but they will not be saved into the Polar Coach's memory.

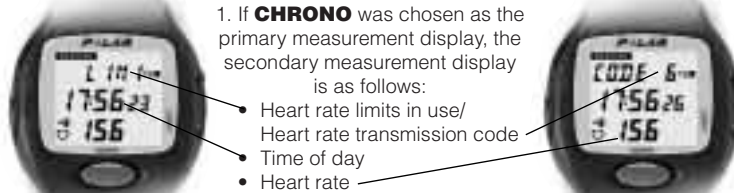


You can see the stored lap and split times with end and average heart rates later when recalling the training information.

CHECKING THE SECONDARY MEASUREMENT DISPLAYS WITH TRANSMISSION CODE AND HEART RATE LIMITS IN USE

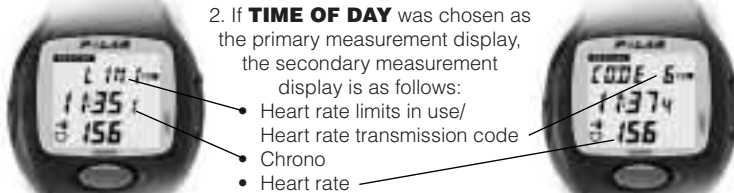
The Polar Heart Touch feature allows you to see the secondary measurement displays for a few seconds without pressing any buttons. **Bring the wrist receiver next to the transmitter's Polar logo for a moment.**

The secondary measurement display depends on which of the three alternatives was chosen for the primary measurement display:



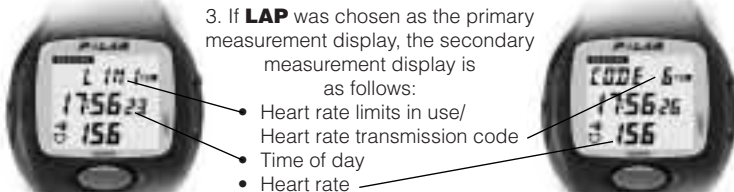
1. If **CHRONO** was chosen as the primary measurement display, the secondary measurement display is as follows:

- Heart rate limits in use/Heart rate transmission code
- Time of day
- Heart rate



2. If **TIME OF DAY** was chosen as the primary measurement display, the secondary measurement display is as follows:

- Heart rate limits in use/Heart rate transmission code
- Chrono
- Heart rate



3. If **LAP** was chosen as the primary measurement display, the secondary measurement display is as follows:

- Heart rate limits in use/Heart rate transmission code
- Time of day
- Heart rate

STARTING THE RECOVERY CALCULATION

- At the end of the exercise session press SET/START/STOP to stop the stopwatch.

Heart rate measurement continues.

Display is illuminated for a few seconds.



- Press STORE/LAP/RECOVERY to start the recovery calculation.

Depending on your setting RECO HR or RECO TI appears in the upper row of the display.



If you selected RECO HR:

You will hear two beeps when the time for the recovery calculation is up. The recovery heart rate, i.e. drop in your heart rate during the preset time, appears in the display for a few seconds.



If you selected RECO TI:

You will hear two beeps when the preset heart rate reading is reached. The preset heart rate value and the recovery time, i.e. the time it took for your heart rate to drop to the preset heart rate value, will be displayed for a few seconds.



Quick way to start the recovery calculation:

When the stopwatch is running press and hold STORE/LAP/RECOVERY until you hear a beep. Release the button.



You may restart the stopwatch after the recovery calculation to continue the exercise session. By consequence the recovery information will be deleted.

To be able to start the Recovery calculation you need to set the recovery values and turn either RECO Hr or RECO TI on first.

► **Setting the Recovery function.**

RESETTING THE STOPWATCH

First press SET/START/STOP to stop the stopwatch. Then press and hold SET/START/STOP until all the stopwatch digits are back to zero. Release the button. The current file is deleted and you can start the stopwatch and record again.

STOPPING THE HEART RATE MEASUREMENT

Choose from the following two alternatives to continue:

1. To stop the heart rate measurement and enter the Time of day display:
Press SET/START/STOP to stop the stopwatch.
Press SELECT 3 times. You are now in the Time of day display and you can recall the recorded information later.
2. To stop the heart rate measurement and continue directly on to recalling the recorded training information. ► **Recalling the training information.**

FUNCTIONS DURING THE INTERVAL TRAINING MODE

An interval training session consists of warm up, interval training, and cool down phases. Heart rate limits swap automatically between the different phases as follows:

LIM1 in use

| Warm up | Intervals | Cool down |
|---------|-----------|-----------|
| LIM 1 | LIM 1 | LIM 1 |

LIM1 and 2 in use

| Warm up | Intervals | Cool down |
|---------|-----------|-----------|
| LIM 1 | LIM 2 | LIM 1 |

LIM1, 2 and 3 in use

| Warm up | Intervals | Cool down |
|---------|-----------|-----------|
| LIM 1 | LIM 2 | LIM 3 |

For further information and examples of interval training sessions

► **Interval training.**

STARTING THE INTERVAL TRAINING SESSION


Structure of an interval exercise session:

| Stopwatch is running | Press SELECT | Returns automatically |
|----------------------|--------------|-----------------------|
| Warm up | Intervals | Cool down |

The following instructions are for basic interval training (Int is ON, countdown timer and recovery calculation are in use).

1. Start the interval training mode as instructed in **Start the heart rate measurement.**



- When the stopwatch is running and there is  in the display, press SELECT to start the intervals.

First:

You will hear three beeps and see the heart rate limits which will be used during the intervals.

Next:

Int 1 will be displayed in the upper row of the display.
Countdown timer of the interval starts running.

- Do the interval until the previously set time for the countdown timer is up.
You will hear three beeps.
Recovery calculation starts.
- The Polar Coach carries out the recovery calculation according to your settings (Reco HR or Reco TI).
You will hear two long beeps when the recovery calculation is ready.
- Immediately after the recovery calculation a new interval begins.
Intervals succeed one another.
When the last preset interval begins, LAST appears in the display.

► Stop the interval training session.



Polar Coach records 28 intervals. After 28 intervals FULL appears in the display. You can continue the interval training but the intervals will not be saved to Polar Coach's memory.

If you store lap times during the warm up phase it reduces the number of the recorded intervals. E.g. if you store 10 lap times the Polar Coach records only 18 intervals.

Even though you will not store any lap times during the heart rate measurement in the Interval training mode, the Polar Coach saves lap times as follows:

- LAP 1 At the end of the warm up phase.
LAP 2 At the end of the interval training session.
LAP 3 At the end of the exercise session.

You can see the stored lap times while recalling the training information in the FILE mode.

DISTANCE BASED INTERVAL TRAINING

Choose from the following two alternatives:

- Distance based intervals:
Turn the timer OFF or set time long enough to cover the distance you use for an interval.

Start the interval training as previously instructed.
Press STORE/LAP/RECOVERY at the distance marks.
Recovery calculation begins.

- Distance based recovery calculation:
Select RECO HR.
Set time long enough to cover the distance you use for recovery.
Start the interval training as previously instructed.
During the recovery calculation press STORE/LAP/RECOVERY at the starting point of a new interval.

SEEING YOUR HEART RATE

► Functions during the heart rate measurement mode.

TURNING THE TARGET ZONE SOUND SIGNAL ON OR OFF

Press and hold SIGNAL/LIGHT.

► Functions during the heart rate measurement mode.

ILLUMINATING THE DISPLAY

Press SIGNAL/LIGHT.



If you use the backlight once during an interval, Polar Coach automatically illuminates the display at the end of each interval and recovery calculation.

CHECKING THE SECONDARY MEASUREMENT DISPLAYS WITH TRANSMISSION CODE AND HEART RATE LIMITS IN USE

► Functions during the heart rate measurement mode.

PAUSING AN INTERVAL

Press SET/START/STOP to pause and restart the stopwatch.

INTERRUPTING AN INTERVAL

Press STORE/LAP/RECOVERY to interrupt an interval.
Recovery calculation starts after which a new interval session begins.

STOPPING AN INTERVAL TRAINING SESSION

Stop the interval training session according to your setting:

If you have pre-set a certain amount of intervals, the interval training session stops automatically after the last interval and recovery calculation:

*Int End appears in the display for a few seconds.
Heart rate limits for the cool down phase will be displayed for a few seconds.
Polar Coach automatically switches to the cool down phase.*



You may interrupt the interval training session earlier by pressing **SELECT**.

If you have selected Int Cont, you may stop the interval training session by pressing **SELECT**:

*You will hear three beeps.
Int End appears in the display for a few seconds.
Heart rate limits which will be used during the cool down phase will be displayed for a few seconds.*

RESTARTING THE INTERVAL TRAINING SESSION

When the interval training session has ended (Int End) and Polar Coach has switched to the cool down phase press **SELECT** to restart the interval training session.

The new interval training session will begin according to your settings.



The information from the new interval training session will be saved after the previous interval information.

STOPPING THE HEART RATE MEASUREMENT

Choose from the following two alternatives to continue:

1. To stop the heart rate measurement and enter the Time of day display:
*Press SET/START/STOP to stop the stopwatch.
Press SELECT 3 times. You are now in the Time of day display and you can recall the recorded information later.*
2. To stop the heart rate measurement and continue directly on to recalling the recorded training information:
*Press SET/START/STOP to stop the stopwatch.
Press SELECT.
FILE is flashing in the uppermost row of the display.
The front pages of the recorded file alternate on the display.*

► **Recalling the training information.**

RECALLING THE TRAINING INFORMATION

Polar Coach saves one training file at a time. Your latest training information is in the memory of the Polar Coach until the next time you start the stopwatch. You can recall your exercise session in the FILE mode.

If you are in the Time of day display press **SELECT** twice.

FILE is flashing in the uppermost row of the display.

The front pages of the recorded file alternate on the display.



Display 1:

Date.
Starting time.
Maximum heart rate of total exercise (MAX).

Display 2:

The number of the last LAP.
Total exercise time.
Average heart rate of total exercise (AVG).

Display 3:

The number of the intervals.
Total duration of the intervals.
Average heart rate of the intervals (AVG).

By pressing STORE/LAP/RECOVERY you can see the following training information on the display:

- LIM1 Settings for Target Zone 1
- LIM2 Settings for Target Zone 2
- LIM3 Settings for Target Zone 3

- LIM1 Exercising time above the Target Zone 1
- LIM1 Exercising time within the Target Zone 1
- LIM1 Exercising time below the Target Zone 1

You will see the same information for LIM2 and LIM3.

Continue recalling according to your training mode (Int OFF / Int ON):

Exercise session information in the heart rate measurement mode (Int OFF):

Recovery calculation info (according to your setting):

- Recovery time.
- Time it took to reach the preset heart rate reading.
- Preset heart rate reading.
- Recovery heart rate.
- Preset time.
- Drop in your heart rate.

Lap/split info:

- LAP number alternating with the duration of the lap.
- Split time.
- Average heart rate of the lap alternating with the heart rate at the end of the lap.

Exercise session information in the interval training mode (Int ON):

Warm up phase info:

- LAP number alternating with the duration of the lap.
- Split time.
- Average heart rate of the lap alternating with the heart rate at the end of the lap.

Interval training info:
(three alternating displays)

Display 1:

- Number of the interval.
- Split time.
- Average heart rate of the interval.

Display 2:

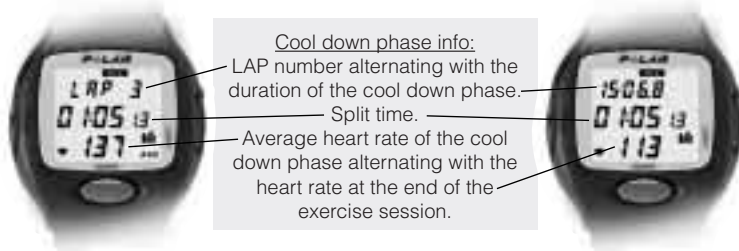
- Duration of the interval.
- Split time.
- Heart rate at the end of the interval.

Display 3
(according to your setting):

- Recovery time.
- Time it took to reach the preset heart rate reading.
- Preset heart rate reading.
- Recovery heart rate.
- Preset time.
- Drop in your heart rate.


Summary of the intervals:

- LAP number alternating with the duration of the whole interval-training session.
- Split time.
- Average heart rate of the intervals alternating with the heart rate at the beginning of the cooldown phase.



Cool down phase info:
 LAP number alternating with the duration of the cool down phase.
 Split time.
 Average heart rate of the cool down phase alternating with the heart rate at the end of the exercise session.

Press STORE/LAP/RECOVERY until you come to the end of the file:
FILE End appears in the display.

 The displays change faster if you press and hold STORE/LAP/RECOVERY down. Release the button when you want to see a certain display for a longer time.

 To view the file backwards, press SIGNAL/LIGHT instead of STORE/LAP/RECOVERY.

Choose from the following two alternatives to continue:

1. To recall the same file again, press STORE/LAP/RECOVERY.
The front pages of the file alternate on the display.
- ▶ Continue from **Recalling the training information.**
2. To return to the Time of day display, press SELECT three times.

DOWNLOADING TRAINING DATA TO A COMPUTER

Polar Coach records essential data for your training log. A training log makes it possible to plan future training and to define the most suitable interval training for maximizing performance capacity.

Polar Coach offers an easy way to analyse training data by computer afterwards. It records average heart rates on sampling rate of 30 s, 1 min, 2 min, 4 min or 8 min depending on the recording time as follows:

| Exercising time | Sampling rate |
|-----------------|---------------|
| - 30 min | 30 s |
| 30 min - 1 h | 1 min |
| 1 h - 2 h | 2 min |
| 2 h - 4 h | 4 min |
| 4 h - 8 h | 8 min |

Maximum recording time is 8 hours.

DOWNLOADING VIA SonicLink™

! To be able to transfer and analyze the recorded training information with your computer, you need the PC Coach Light™ software and a personal computer with a Microsoft compatible sound card and microphone.

If you are in the Time of day display press SELECT twice.
FILE is flashing in the uppermost row of the display.
The front pages of the recorded file alternate on the display.

1. Start the PC Coach Light™ software.
2. Activate the download function of the PC Coach Light™ software.
3. Bring and hold the back cover of the Polar Coach wrist receiver next to the computer's microphone.



To make sure that the training information transfer will be successful:

- Check that there are no interfering sounds near the computer.
- Keep the Polar Coach wrist receiver within 2 "/>5 cm of the microphone until the SonicLink sound has ceased.

4. Press SET/START/STOP.
COM appears in the display.

5. Press SET/START/STOP.
You will hear a chirping sound (SonicLink™) while the training information is transferred to the computer.



You can interrupt the file transfer by pressing the SELECT button.

DOWNLOADING VIA POLAR INTERFACE

Polar Coach wrist receiver is downloadable also with the following

Polar Interfaces:

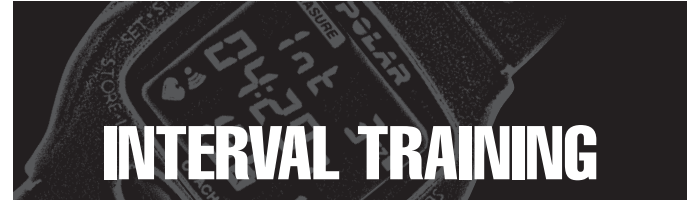
- Polar Interface Plus™
- Polar Advantage Interface™
- Polar Computer Interface™

Polar Softwares:

- Polar Training Advisor™ (Version 1.1 and upwards)
- Polar Precision Performance™ (Version 2.1 and upwards)

If you are in the Time of day display press SELECT twice.
FILE is flashing in the uppermost row of the display.
The front pages of the recorded file alternate on the display.

1. Place the Polar Coach wrist receiver on the Polar interface.
2. Press SET/START/STOP.
COM appears in the display.
3. Press STORE/LAP/RECOVERY.
4. See the software user's guide for more instructions.

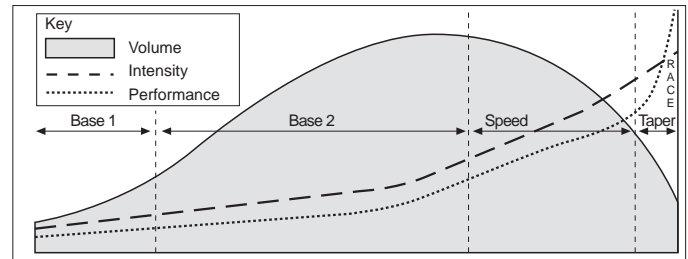


Interval training seeks to improve your race pace. Initially, you need to start your interval training with short periods of work and long periods of rest. You will gradually progress to long periods of work and short periods of rest as you adapt to the increasing volume and the interval intensity. Eventually, you will train at race intensity for most, if not all, of the distance you are aiming to race over.

Most interval training for endurance sports is performed at or near maximum steady state (MSS) pace which is about 80-90% training intensity. Recovery between intervals can be set to a pre-selected time or the time it takes for your heart rate to drop to a specified level (e.g. 40 to 50 beats below interval training heart rate). The more fit you are the shorter the recovery period because your heart rate will return faster to the initial level.

Interval training is not designed to be done week after week. They are high intensity weeks suitable for a pre-season build-up. Don't do a hard session if you feel tired. Change to an easy session or have a day off.

With the Polar Coach Heart Rate Monitor you can achieve not only the right interval intensity level, but also the right rest periods between the intervals.



Training volume vs. training intensity vs. performance

Reference: The Power to Perform, p.25.

Volume is the amount of training completed; intensity is the effort or energy required for a particular form of training. Volume increases and decreases during the training year depending on where you are in your build-up. Intensity, on the other hand, increases right throughout your build-up phase, gradually in the base but more rapidly during the speedwork phase. Volumes of intensity increase and decrease.

Your performance parallels your intensity but remains low for a longer period of time and has a more gradual increase. During speedwork performance begins to improve more rapidly and is at its peak rate of increase during the taper period. This means that despite all your hard training in the base, you will not see the real benefits until very late in the build-up.

CALCULATING TARGET HEART RATES

Correct interval intensity is determined by laboratory testing because both resting and maximum heart rates vary from individual to individual. The most reliable way to determine your maximum heart rate (HR_{max}) is by an exercise stress test. This can also be determined, although less accurately, by indirect calculations. According to the American College of Sports Medicine (ACSM) most people can estimate their maximum heart rate by the formula:

220 - Age = Maximum Heart Rate (HR_{max})

To find a true resting heart rate (HR_{rest}), lie in bed for 2 to 3 relaxing minutes in the morning after waking up, then use the Polar Heart Rate Monitor to measure your resting heart rate.

The Karvonen formula, which is based on a heart rate reserve taking into account the resting heart rate as well as the maximum heart rate, is an accurate method for calculating the target heart rate.

By subtracting your resting heart rate from your maximum heart rate you can use the Karvonen formula to calculate your target heart rates for various training intensities. Both the HR_{rest} and HR_{max} should be measured values - not predicted - for the Karvonen formula:

$$\text{Target HR} = [(HR_{max} - HR_{rest}) \times \% \text{ training intensity}] + HR_{rest}$$

Example:

HR_{max} : 200 beats per minute
 HR_{rest} : 50 beats per minute



50% training intensity:

$$\begin{aligned} \text{Target Heart Rate} &= (HR_{max} - HR_{rest}) \times 50\% + HR_{rest} \\ &= (200 - 50) \times 50\% + 50 \\ &= 150 \times 50\% + 50 \\ &= 75 + 50 \\ &= 125 \text{ beats per minute} \end{aligned}$$

EXAMPLES OF INTERVAL TRAINING SESSIONS

Training intensity in the following example exercise sessions refers to the Karvonen formula calculation. If the target heart rate is calculated as a percentage based on HR_{max} the corresponding training intensity is higher. E.g. 50% of Karvonen formula corresponds to the 60% of HR_{max} (see the table).

| Target heart rate based on | Classification of intensity | |
|------------------------------|-----------------------------|------------|
| HR_{max} | the Karvonen formula | |
| <35% | <30% | Very light |
| 35-59% | 30-49% | Light |
| 60-79% | 50-74% | Moderate |
| 80-89% | 75-84% | Heavy |
| ≥90% | ≥85% | Very heavy |

Adapted from Pollock and Wilmore (1990). Reference: Physiology of sport and exercise, p.524.

RUN INTERVAL SESSION

Five minute intervals

- 15 min warm up.
- Stop and stretch.
- 5 min hard at 80-90% training intensity, repeat 2-4 times.
- 15-20 min cool down at 60-70% training intensity.

Start with 2 intervals. As your fitness improves, add another interval.

BIKE INTERVAL SESSION

Five minute intervals

- 15 min warm up: low gear, easy spin, 60% training intensity.
- Stop and stretch.
- 5 min hard at 80-90% training intensity, repeat 3 times.
- 2 min easy at 60-70% training intensity.

RUN/BIKE INTERVALS



Take your stationary cycle trainer to a track and set-up near start/finish line.

400 m repeats / stationary cycle trainer

- 15 min warm up. Run or bike at 60% training intensity.
- Run 400 m at 90% training intensity.
- Jog slowly in a circle until your heart rate comes down to 75-80% training intensity.
- Repeat 3 more times.
- Cycle 15-20 min at 70-80% training intensity.

REFERENCES

American College of Sports Medicine. Position Stand. The Recommended Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory and Muscular Fitness in Healthy Adults. *Med Sci Sports Exerc* 22: 265-274, 1990.

American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription. Williams & Wilkins, 1995.

Jackson, A.S., Blair, S.N., Mahar, M.T., Wier, L.T., Ross, R.M. and Stuteville, J.E. Prediction of functional aerobic capacity without exercise testing. *Med Sci Sports Exerc* 22: 863-870, 1990.

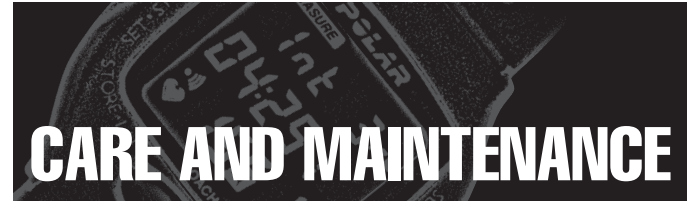
U.S. Department of Health and Human Services. Physical Activity and Health: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 1996, 147.

Auckland, J., Brett R. The Power to Perform. A comprehensive guide to training and racing for endurance athletes. Revised edition. Reed Books, Auckland, New Zealand, 1998.

Auckland, J. Precision training, Training Programmes for 27 Sports Using Heart Rate Monitors. Reed Books, Auckland, New Zealand, 1996.

Brick, M. Precision Multisport. Polar Electro Oy, Kempele, Finland, 1998.

Wilmore, J.H., Costill, D.L. Physiology of sport and exercise. Human Kinetics. Champaign, Illinois, USA, 1994.



Your Polar Heart Rate Monitor is a high-tech instrument of superior design and workmanship and should be treated with care. The suggestions below will help you fulfill the warranty obligations and enjoy this product for many years to come.

TAKING CARE OF YOUR POLAR HEART RATE MONITOR

- Wash the Polar Coded Transmitter regularly after use with a mild soap and water solution. Dry it carefully after washing.
- Never store the transmitter wet. Sweat and moisture can keep its electrodes wet and the transmitter activated, which shortens the battery life.
- Store your Polar Heart Rate Monitor in a cool and dry place. Do not store it in any kind of non-breathing material, such as a plastic bag or a sports bag if it is wet.
- Do not bend or stretch the transmitter. This may damage the electrodes.
- Keep your Polar Heart Rate Monitor out of extreme cold (below 14°F/ -10°C) and heat (above 122°F/ 50°C).
- Do not expose the Polar Heart Rate Monitor to direct sunlight for extended periods, for example by leaving it in a car.
- Do not dry the transmitter in any other way than with a towel. Rough handling may damage the electrodes.

BATTERIES

POLAR CODED TRANSMITTER

The estimated average battery life of the Polar Coded Transmitter is 2500 hours of use. Contact a Polar authorized Service Center for a transmitter replacement. ► **Service** for detailed instructions.

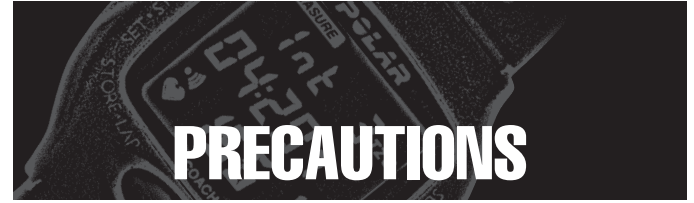


Polar recycles used transmitters.

POLAR COACH WRIST RECEIVER

The estimated average battery life of the Polar Coach receiver is 1 year in normal use (1h/day, 7 days a week). However, because the battery is inserted at the factory, the actual life of your first battery once in your possession may be less than the estimated battery life. Note also that excessive use of the backlight and the alarm signals will use the battery up more rapidly.

It is not recommended to open the Polar Coach wrist receiver yourself. To ensure the retention of the water resistance properties and the use of authorized components, the wrist receiver battery should be replaced only by a authorized Polar Service Center. At the same time a full periodic check of the Polar Heart Rate Monitor will be done. Contact Polar Electro Inc. ► **Service** for detailed instructions.



THE POLAR HEART RATE MONITOR IN A WATER ENVIRONMENT

Polar Heart Rate Monitors are water resistant to 20 meters. To maintain this water resistance, do not operate the buttons of the Polar wrist receiver under water.

Heart rate measurement in a water environment is technically demanding for the following reasons:

- Pool water with a high chlorine content and seawater may be very conductive and the electrodes of a transmitter may get short circuited, causing the ECG signals not to be detected by the transmitter unit.
- Jumping into the water or strenuous muscle movement during competitive swimming may cause water resistance that shifts the transmitter on the body to a location where it is not possible to pick up the ECG signal.
- ECG signal strength varies depending on an individual's tissue composition. The percentage of people who have problems with heart rate measuring is considerably higher in a water environment than in other cases.

THE POLAR HEART RATE MONITOR AND INTERFERENCE

ELECTROMAGNETIC INTERFERENCE

Interference may occur near high voltage power lines, traffic lights, overhead lines of electric railways, electric bus lines or trams, televisions, car motors, bike computers, some motor driven exercise equipment, cellular phones or when you walk through electronic security gates.

CROSTALK

The Polar wrist receiver in non-coded mode of operation picks up transmitters signals within 1 meter / 3 feet. Therefore, make sure no other transmitter is within that range. Non-coded signals from more than one transmitter picked up simultaneously can cause an incorrect readout.

EXERCISE EQUIPMENT

Several pieces of exercise equipment with electronic or electrical components such as LED displays, motors and electrical brakes may cause interfering stray signals. To try to tackle these problems, relocate the Polar wrist receiver as follows:

1. Remove the transmitter from your chest and use the exercise equipment as you would normally.
2. Move the Receiver around until you find an area in which it displays no stray reading or the heart symbol does not flash. Interference is often worst right in front of the display panel of the equipment, while the left or right side of the display is relatively free of disturbance.
3. Put the transmitter back on your chest and try to keep the wrist receiver in the interference free area.
4. If the Polar Heart Rate Monitor still does not work with the exercise equipment, this piece of equipment may be too noisy electrically for wireless heart rate measurement.

MINIMIZING POSSIBLE RISKS IN EXERCISING WITH A HEART RATE MONITOR

Exercise may include some risk, especially for those who have been sedentary. To minimize possible risks consider the following advice.

Before beginning a regular exercise program consult your doctor

- if you are over 35 years of age and have not been following a regular exercise program during the past 5 years
- if you smoke
- if you have high blood pressure
- if you have high blood cholesterol
- if you have any signs or symptoms of any disease if you are recovering from a serious illness or a medical treatment e.g. surgery
- if you use a pacemaker or another implanted electronic device.

Note also that in addition to exercise intensity the heart rate can be affected by, amongst others, heart, circulation (particularly high blood pressure) and asthma and other breathing medications, as well as some energy drinks, alcohol and nicotine.

It is important to be sensitive to your body's reactions during the exercise. If you feel unexpected pain or tiredness regarding your exercise intensity level, it is recommended to stop the exercise or continue at a lighter intensity.

Notice to persons with pacemakers

Persons who have a pacemaker use the Polar Heart Rate Monitor at their own risk. Before starting use, we always recommend an exercise test under doctor's supervision. The test is to ensure the safety and reliability of the simultaneous use of the pacemaker and the heart rate monitor.



WHAT SHOULD I DO IF...

... I DON'T KNOW WHERE I AM IN THE SETTING CYCLE?

Press SELECT several times until you are back in the Time of day display.

... THERE IS NO HEART RATE READING?

1. Check that the electrodes of the transmitter are moistened and that you are wearing it as instructed.
2. Check that you have kept the transmitter clean. ► **Care and maintenance**
3. Check that there are no sources of electromagnetic radiation near the Polar wrist receiver, such as TV sets, cellular phones, CRT monitors, etc. ► **Precautions**
4. Have you had a cardiac event which may have altered your ECG waveform? In this case consult your physician.

...THE HEART SYMBOL FLASHES IRREGULARLY?

1. Check that your Polar wrist receiver is inside the transmission range and not further than 3 feet / 1 meter from the Polar Coded Transmitter you are wearing.
2. Check that the elastic strap has not become loose during exercise.
3. Make sure that the electrodes of the transmitter are moistened.
4. Cardiac arrhythmia may cause irregular readings. In this case consult your physician.

... ANOTHER PERSON WITH A HEART RATE MONITOR OR MOTOR DRIVEN EXERCISE EQUIPMENT IS CAUSING INTERFERENCE?

Make sure there is no interference coming from such things as high voltage power lines, electric railways or bus lines, televisions, car motors, cycle computers, motor driven exercise equipment or other people with heart rate monitors near you during the code search. The benefit of the coding is that you will not normally pick up other people's heart rate transmissions and certain kinds of interference are more efficiently filtered.

However your training partner may have coincidentally activated exactly the same code. ► **Checking the secondary measurement displays with transmission code and heart rate limits in use.** In this case you have the following alternatives:

1. Keep a distance from your training partner and continue your training session normally
- or
2. Stop the heart rate measurement (► **Stop the heart rate measurement**), pull the transmitter off your chest for 15 seconds (code will be changed) and restart from the beginning (► **Start the heart rate measurement**).

In some cases you may need to dry the transmitter electrodes to ensure that the transmitter is turned off again, as sweat may keep it active even when it is off your chest.

... THERE ARE NO REACTIONS TO ANY BUTTONS?

Reset the Polar Heart Rate Monitor. Resetting clears all memory values and settings will return to the default settings.

1. Press the reset button with a pen tip.
Display becomes full of digits.
2. Press any of the four buttons once.
The Polar Coach enters the Time of day display.

... THE DISPLAY IS BLANK OR FADING?

Usually the first sign of a discharged battery is the disappearance of the digits when using the backlight. Have the batteries checked. ► **Service**

... IF THE BATTERY OF THE WRIST RECEIVER MUST BE REPLACED?

We recommend having all service done by an authorized Polar Service Center. This is especially necessary to ensure that the warranty remains valid and is not affected by incorrect repair procedures done by an unauthorized agent. Polar Service will test your wrist receiver for water resistance after battery replacement and make a full periodic check of the complete Polar Heart Rate Monitor. ► **Care and Maintenance/Batteries** and **Service**

... I HAVE QUESTIONS CONCERNING THE SonicLink™ DATA TRANSFER OR THE PC COACH LIGHT™ SOFTWARE?

Contact Biometrics Inc., 637 S Broadway, Suite B-156, Boulder, CO 80303, USA, Phone: + (303) 442-1818, Fax: + (303) 494-9722, www.pccoach.com. Contact information is found also under the help menu of the PC Coach Light™ software.



♥ Indicates an ongoing heart rate measurement and flashes to the beat of your heart.

♥ Indicates a coded transmission of heart rate. The inner heart flashes to the beat of your heart.

•))) In the Time of day display indicates that the alarm is on. In the Measure mode indicates that the sound signal will beep if you are exercising outside your target heart rate zone.

-- When starting the heart rate measurement, these flashing lines indicate that the search for the coded transmission is being conducted.

|||| Indicates that you are setting the interval training mode functions or that you are exercising in the interval training mode.

||||| Indicates continuous intervals: (see also Cont).

ALARM: Indicates the alarm in watch settings.

AM or PM: 12 hour mode of time.

AVG: Together with a reading indicates average heart rate.

Chrono: Displays the total exercising time during the heart rate measurement.

COM: Indicates a file transfer to a PC.

Cont: Intervals succeed one another until the interval training session is stopped.

DATE: Indicates the date in watch settings.

Electrodes: The grooved areas of the transmitter, against the skin. Pick up the heart's electrical impulses.

FILE: Indicates the File mode.

FILE End: Indicates the end of the file you are reviewing.

FULL: After having stored 43 lap times in the Heart Rate Measurement or 28 intervals in the Interval training mode FULL appears in the display. You can continue taking the lap times or intervals but they won't be recorded into the Polar Coach's memory.

Graphic bar: The graphic bar consists of five blocks and indicates the settings of watch, heart rate or interval training functions. A flashing block means that the setting of that particular function is possible.

Heart rate: The number of heart beats per minute (bpm).

Heart rate reserve: $HR_{reserve} = HR_{max} - HR_{rest}$

HR_{max} : Maximum heart rate

HR_{rest} : Resting heart rate

Int: Interval training

Karvonen formula: The calculation of a training heart rate by adding a given percentage of the heart rate reserve to the resting heart rate. This method gives an adjusted heart rate that is equivalent to the desired percentage of VO₂max (maximal oxygen uptake).

LAP: In Measure and File modes, together with a number, indicates how many lap times have been stored.

Lap and split times: Time needed to move once around a closed course or track.

LAST: When the last interval begins, LAST appears in the display.

LIM1 / LIM2 / LIM3: Heart Rate Limits for Target Zones 1, 2 and 3.

Lower Limit: The lower heart rate limit of the target zone.

MAX: Together with a reading indicates maximum heart rate.

MEASURE: Measure mode. In the measure mode you can exercise either in the normal Heart Rate Measurement mode or in the Interval Training mode.

Polar Coded Transmitter: Automatically locks in a code to transmit your heart rate to your wrist receiver. In a coded transmission the receiver accepts heart rate data only from your Polar Coded Transmitter. Coding significantly reduces crosstalk caused by other users of heart rate monitors. However, it does not necessarily reduce all environmental interference.

Polar Heart Touch: During the measurement mode bring the wrist receiver next to the Polar logo of the Polar Coded Transmitter for a moment.

Primary measurement display: In the Heart Rate Measurement mode the middle row of the display indicates either total exercising time, time of day or lap time according to your settings.

Reco Hr, recovery heart rate: Decrease in heart rate during the pre-set period of time.

Reco TI, recovery time: Time until a certain preset heart rate reading is reached.

Secondary measurement displays: The secondary measurement displays will be seen for a few seconds by bringing the wrist receiver next to the Polar logo on the Polar Coded Transmitter for a moment. The secondary measurement display depends on which of the three alternatives was chosen for the primary measurement display.

SET: Set mode.

Sound: Indicates the button sound in watch settings.

Target Zone limits: Target Zone limits are determined either according to the Karvonen formula or as percentages of maximum heart rate. The percentages are converted into heart rates in beats per minute.

TIM (In the Interval Training mode): Countdown timer for the interval.

TIM1 / TIM2 (In the Heart Rate Measurement mode): Timers 1 and 2 help you to divide your exercise session into separate phases (e.g. warm-up, exercise phase, cool down). Timers can be used individually (only Timer 1) or sequentially.

TIME: Indicates the time of day.

TIME 12h/24h: Indicates the 12h or 24h time mode in watch settings.

TZ, Target Zone: The area between the upper and lower target zone limits. Target Zone selection is based on personal fitness goals.

TZ ■ During heart rate measurement the TZ symbol with a block next to it indicates that you are exercising within the Target Zone. In File mode this indicates the time spent within the Target Zone.

■
TZ ■ During heart rate measurement the TZ symbol with an upper block flashing indicates that the heart rate is above the Target Zone. In File mode this indicates the time spent above the Target Zone.

■
TZ ■ During heart rate measurement indicates that the heart rate is below the Target Zone. In File mode this indicates the time spent below the Target Zone.

Upper limit: The upper heart rate limit for the target zone.

TECHNICAL SPECIFICATIONS

The Polar Heart Rate Monitor is designed to indicate the level of physiological strain and intensity in sports and exercise. No other use is intended or implied. The heart rate is displayed as number of beats per minute (bpm).

POLAR CODED TRANSMITTER

| | |
|------------------------|--------------------------------|
| Battery type: | Built-in Lithium Cell |
| Battery life: | Average 2500 hours of use |
| Operating temperature: | 14°F to 122°F / -10°C to +50°C |

POLAR COACH WRIST RECEIVER

| | |
|-------------------------------------|--|
| Battery type: | CR 2032 |
| Battery life: | Average 1 year (1h/day, 7 days/week) |
| Operating temperature: | 14°F to 122°F / -10°C to +50°C |
| Water resistance: | to 20 meters |
| Accuracy of heart rate measurement: | ± 1% or ± 1 beats per minute, whichever is larger, definition applies to steady state conditions |

DEFAULT SETTINGS

| | |
|------------------------------|----------|
| Alarm: | OFF |
| Button Sound: | OFF |
| Time mode: | 24h |
| Interval training: | OFF |
| Number of intervals: | 2 |
| Timer 1: | OFF |
| Timer 2: | OFF |
| Limits 1: | 80 - 160 |
| Limits 2: | OFF |
| Limits 3: | OFF |
| Recovery function: | OFF |
| Primary measurement display: | Chrono |

SETTING LIMITS

| | |
|----------------------------|--------------------|
| Chrono: | 99 h 59 min 59 sec |
| Heart rate limits: | 10 - 240 |
| Heart rate based recovery: | 99 min 59 sec |
| Time based recovery: | 0 - 240 |
| Timer: | 99 min 59 sec |

BOOKS AND ACCESSORIES

POLAR BOOKS AND BOOKLETS

| | |
|--|--|
| Roy Benson, MPE | Precision Running |
| Dr. Matthew Brick | Precision Multi-Sport |
| Edmund R. Burke, Ph.D. | Precision Cycling |
| Edmund R. Burke, Ph.D. | Precision Heart Rate Training |
| Neil Craig | Scientific Heart Rate Training |
| Sally Edwards | The Heart Rate Monitor Book |
| Mark Fenton and Dave McGovern | Precision Walking |
| Ute Haas, M.Sc., Tarja Suomi, M.Sc. and Dr. Raija Laukkanen, Ph.D. | Precision Aerobics Training, Lactate, Pulse Rate |
| Dr. Peter J.G.M. Janssen | Lessons from the Heart |
| Beth Kirkpatrick and Burton H. Birnbaum | Precision Weight Management |
| Dr. Katriina Kukkonen-Harjula, MD and Dr. Raija Laukkanen, Ph.D. | Research Index |
| Dr. Raija Laukkanen, Ph.D. | Precision Sports Aerobics |
| Yvonne Lin | Target Your Fitness and Weight Management Goals |
| Dr. James M. Rippe | The Polar Fat Free and Fit Forever Program |
| Dr. James M. Rippe | |

POLAR ACCESSORIES

- Polar Bike Mount for all bikes and Polar Heart Rate Monitors
- Elastic strap of different lengths
- Extra Transmitter for other family members
- Polar Heart Bra for women
- Test handle for groups and trainers

POLAR HEART RATE MONITORS

Several models of heart rate monitors manufactured by Polar are readily available for your different requirements in measuring the physical activity.

Ask your local dealer or Polar Electro Inc. for more details.



To ensure the continuous improvement of Polar products, please complete and mail the enclosed Warranty Registration Card within two weeks of the date of purchase.

Polar Service will help you get the most out of your Polar Heart Rate Monitor. Should your Polar Heart Rate Monitor need service, please follow the instructions below:

CHECK LIST

Before you return your Polar Heart Rate Monitor for service, please check the following:

1. Is the transmitter being worn correctly ?

The Polar logo should be right side up and the transmitter should be flat against the skin. The elastic strap should be adjusted for a snug and comfortable fit.

2. Are the electrodes moist on the transmitter ?

It is important that the electrodes be wet during the heart rate measurement.

3. Is the transmitter clean ?

Regular washing with mild soap and water solution, followed by thorough drying, will ensure that good conductivity is retained.

4. Are you suffering from interference caused by other people with heart rate monitors or exercise equipment?

Check that the code search at the beginning of the measurement has been successful. See Start the heart rate measurement and Frequently asked questions for details.

SENDING INSTRUCTIONS:

1. Pack the product carefully to avoid damage. For contact address, see the back cover of this manual or the Customer Care Charter.
2. Include all parts of the Polar Heart Rate Monitor. A full periodic check will be done on the whole product.
3. Include proof of purchase (a receipt or its photocopy) if the product is under warranty.
4. Include a detailed description of the problem. Indicate if the receiver battery should be replaced.
5. Include your name, return address and daytime telephone number.
6. Include \$ 7.50 check or money order for return shipping and handling.
7. Prepay mail postage to Polar Electro Inc.
8. It is recommended to ship the package back so that it can be traced if a problem occurs (i.e. UPS, Fed Ex, Priority Mail).

POLAR SERVICE PROCEDURE

Any service is recommended to be done by an authorized Polar Service Center. Our standard test and check procedures will be performed on all Polar Heart Rate Monitors. The tests include the following elements:

POLAR CODED TRANSMITTER

1. Visual inspection
2. Check of the transmission range
3. Check of electrode conductivity
4. Wash and clean if necessary

POLAR WRIST RECEIVER

1. Visual inspection
2. Check of battery voltage
3. Check and cleaning of case contacts
4. Re-assembly, including seal renewal if necessary
5. Water resistance test
6. Operational test



Water resistance cannot be guaranteed after unauthorized service.

PC COACH LIGHT™ SOFTWARE SUPPORT

See PC Coach Light™ software manual or contact Biometrics Inc., 637 S Broadway, Suite B-156, Boulder, CO 80303, USA
Phone: + (303) 442-1818, Fax: + (303) 494-9722, www.pccoach.com.
Contact information is found also under the help menu of the PC Coach Light™ software.

LIMITED POLAR WARRANTY

- Polar Electro Inc. warrants to the original consumer/ purchaser of this heart rate monitor that the product will be free from defects in material or workmanship for one year from the date of purchase. **Please keep the receipt which is your proof of purchase!**
- **Polar transmitter is covered by a two year maintenance free warranty.**
- Warranty does not cover receiver battery, damage due to misuse, abuse, accidents or negligence of the precautions; improper maintenance, commercial use, cracked or broken cases.
- Warranty does not cover damage or consequential damage caused by service not authorized by Polar Electro Inc.
- During the warranty period the product will be either repaired or replaced at an authorized service center free of charge.
- PC Coach Light software is guaranteed by Biometrics Inc.

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The PC Coach logo is a registered trademark, and SonicLink and PC Coach Light are trademarks of, Biometrics Inc. U.S. Patent 5 7199825

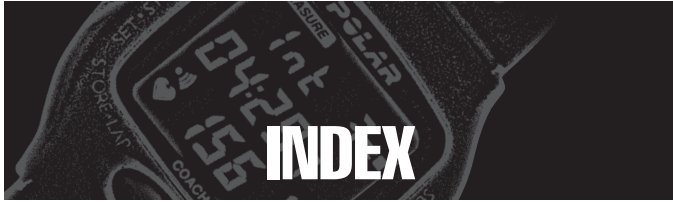


This CE marking shows compliance of this product with Directive 93/42/EEC.

This product is protected by one or several of the following patents:
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FI 68734, DE 3439238, GB 2149514, HK 812/1989, US 4625733,
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DISCLAIMER

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- Polar Electro Inc. makes no representations or warranties with respect to this manual or with respect to the products described herein. Polar Electro Inc. shall not be liable for any damages, direct or incidental, consequential or special, arising out of, or related to, the use of this material or the products described herein.



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